

WHAT IS CLAIMED IS:

1. A diffractive optical element comprising :
a first diffractive optical part having a
phase type diffractive grating; and

5 a second diffractive optical part having a
phase type diffractive grating formed of a material
differing from that of said first diffractive optical
part;

10 said first diffractive optical part and said
second diffractive optical part being disposed in
proximity to each other with an air layer therebetween;

15 each of said first diffractive optical part
and said second diffractive optical part having a mark
for aligning them with the optical effective areas
thereof.

20 2. The diffractive optical element of Claim 1,
wherein the diffractive grating each of said first
diffractive optical part and said second diffractive
optical part has is a diffractive grating formed into a
concentric circular shape, and the projection area of
said mark is 0.1 % or less relative to the projection
area of the first diffractive grating area as counted
from the center.

25 3. The diffractive optical element of Claim 2,
wherein the influence of said mark upon the optical

performance of said diffractive optical element is smaller than the reduction in the optical performance during the making of said diffractive optical element.

5 4. The diffractive optical element of Claim 1, wherein the diffractive gratings said first diffractive optical part and said second diffractive optical part have are formed of difference materials.

10 5. The diffractive optical element of Claim 1, wherein the depth of said mark is 10 % or less relative to the depth of the diffractive grating each of said first diffractive optical part and said second diffractive optical part has.

15 6. An optical system provided with the diffractive optical element of Claim 1.

20 7. An optical apparatus provided with the diffractive optical element of Claim 1.

25 8. A method of manufacturing a diffractive optical element comprising:
the step of molding a first diffractive optical part having a phase type diffractive grating;
the step of molding a second diffractive optical part having a phase type diffractive grating;

the step of aligning said first diffractive optical part and said second diffractive optical part with each other while observing a mark present on the optical effective area of each of said first

5 diffractive optical part and said second diffractive optical part; and

the step of fixing said first diffractive optical part and said second diffractive optical part with an air layer therebetween.

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9. A metal mold for manufacturing a diffractive optical element comprising:

a first area for molding a phase type diffractive grating; and

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a second area provided in said first area for molding a mark for aligning said diffractive grating with other member.

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